

IN THE SPECIFICATION

Please amend the title as:

INTEGRATED CROSS-SWITCHING UNIT AND SERVICE SCHEDULING  
METHOD THEREOF~~INTEGRATED CROSS EXCHANGE UNIT AND A METHOD~~  
~~OF THE SERVICE DISPATCHING~~

Please replace the paragraph beginning at page 2, line 2 with:

FIG.1 shows a data switching solution of the prior art. In this solution, a data service processing unit transmits the data as required to be switched to a data switching unit via data bus to implement switching; a line unit implements separation of data service and TDM service on TDM (such as SDH/SONET)~~SDH~~ lines, so that the data service gets to the data switching unit via the data bus to be switched, and the TDM service is crossed by a cross-connecting unit.

Please delete the 3 paragraphs beginning on page 2, line 14 “It can . . . TDM service.”.

Please replace the paragraph beginning at page 2, line 25 with:

~~In view of the disadvantages of the prior art, an embodiment~~ An aspect of the present invention aims to provide an integrated cross-switching unit to integrate the functions of TDM cross-connecting and data switching into the same unit, which reduces the demand of system slots; another embodiment of the present invention aims to provide a service scheduling method using the above integrated cross-switching unit.

Please replace the paragraph beginning at page 3, line 5 with:

The integrated cross-switching unit according to an embodiment of the present invention, used for ~~TDMSDH~~ system comprising an ~~SDH-TDM~~ line unit and a data service processing unit, including: a bus identification module, a cross-connecting module, a mapping/de-mapping module, an encapsulation/de-encapsulation module, and a packet scheduling module; wherein

Please replace the paragraph beginning at page 3, line 12 with:

the bus identification module transmits the data service and/or TDM service from the ~~SDH-TDM~~ line unit to the cross-connecting unit and transmits the data service from the data service processing unit to the packet scheduling module;

Please replace the paragraph beginning at page 3, line 16 with:

the cross-connecting module implements cross-scheduling for time slots of the TDM service, and schedules the time slots corresponding to the data service from the ~~SDH-TDM~~ line unit to the mapping/de-mapping module;

Please replace the paragraph beginning at page 3, line 20 with:

the mapping/de-mapping module receives data frames from the cross-connecting module, and implements mapping/~~de-mapping~~ for the data from the encapsulation/de-encapsulation module;

Please replace the paragraph beginning at page 3, line 27 with:

the packet scheduling module receives the data packets from the encapsulation/de-encapsulation module and/or the bus identification module to implement packet scheduling based on label; transmitting the scheduled data to the data service processing unit via packet bus or to the ~~SDH-TDM~~ line unit via the encapsulation/de-encapsulation module, the mapping/de-mapping module and the cross-connecting unit in turn.

Please replace the paragraph beginning at page 4, line 21 with:

Another aspect of the present invention aims to provide an integrated cross-switching unit, used for ~~SDH-TDM~~ system including an ~~SDH-TDM~~ line unit and a data service processing unit, including: a bus identification module, a high-order

cross-connecting module, a high-order mapping/de-mapping module, a high-order encapsulation/de-encapsulation module, a high-order packet scheduling module, a low-order cross-connecting module, a low-order mapping/de-mapping module, a low-order encapsulation/de-encapsulation module, and a low-order packet scheduling module; wherein

Please replace the paragraph beginning at page 5, line 3 with:

the bus identification module transmits the data service and/or TDM service from the ~~SDH-TDM~~ line unit to the high-order cross-connecting unit, and transmits the data service from the data service processing unit to the high-order packet scheduling module;

Please replace the paragraph beginning at page 5, line 8 with:

the high-order cross-connecting module schedules the service as required for low-order processing to the low-order cross-connecting module, implements cross-scheduling for time slots of high-order TDM service, and schedules the time slots corresponding to the high-order data service from the ~~SDH-TDM~~ line unit to the high-order mapping/de-mapping module;

Please replace the paragraph beginning at page 5, line 14 with:

the low-order cross-connecting module implements cross-scheduling for time slots of low-order TDM service, and schedules the time slots corresponding to low-order data service from the ~~SDH~~TDM line unit to the low-order mapping/de-mapping module;

Please replace the paragraph beginning at page 5, line 19 with:

the high-order and low-order mapping/de-mapping modules receive the data frames from the high-order and low-order cross-connecting modules correspondingly, and implement mapping/de-mapping for the data from the high-order and low-order encapsulation/de-encapsulation modules respectively;

Please replace the paragraph beginning at page 6, line 3 with:

the high-order packet scheduling module receives the data packets from the high-order encapsulation/de-encapsulation module and/or the bus identification module and implements packet scheduling based on label; transmitting the scheduled data to the data service processing unit via packet bus or to the TDM~~SDH~~ line unit via the high-order encapsulation/de-encapsulation module, the high-order mapping/de-mapping unit and the high-order cross-connecting module in turn;

Please replace the paragraph beginning at page 6, line 12 with:

the low-order packet scheduling module receives the data packets from the low-order encapsulation/de-encapsulation module and implements packet scheduling based on label; transmitting the scheduled data to the TDMSDH line unit via the low-order encapsulation/de-encapsulation module, the low-order mapping/de-mapping unit and the low-order cross-connecting module in turn. The low-order packet scheduling module receives the data packets from the low-order encapsulation/de-encapsulation module and implements packet scheduling based on label; the data after scheduling are transmitted to the data service processing unit through Packet Bus or get to the TDMSDH Unit through low-order encapsulation/de-encapsulation module, low-order Mapping/De -mapping Unit and low-order cross-connecting module in turn.

Please replace the paragraph beginning at page 6, line 26 with:

A further aspect of the present invention aims to provide a service scheduling method implemented by the above integrated cross-switching unit, including the steps of:

Please replace the paragraph beginning at page 7, line 1 with:

A) the bus identification module transmitting the data service and/or TDM service from the TDMSDH line unit to the cross-connecting module, and going to step B); transmitting the data service from the data service processing unit to the packet scheduling module, and going to step C);

Please replace the paragraph beginning at page 7, line 6 with:

B) the cross-connecting module implementing cross-scheduling for time slots of the TDM service, and transmitting the scheduled data to the TDMSDH line unit; or scheduling the time slots corresponding to the data service from the TDMSDH line unit to the mapping/de-mapping module, the encapsulation/de-encapsulation module receiving the data service from the mapping/de-mapping module and transmitting the data service to the packet scheduling module, and going to step C);

Please replace the paragraph beginning at page7, line 15 with:

C) the packet scheduling module implementing packet scheduling for the data service; transmitting the scheduled data to the data service processing unit via packet bus, or to the TDMSDH line unit via the encapsulation/de-encapsulation module, the mapping/de-mapping module and the cross-connecting module in turn.

Please replace the paragraph beginning at page 7, line 27 with:

Preferably, the TDMSDH line unit and the data service processing unit copy the service to a first integrated cross-switching unit and a second integrated cross-switching unit which have completely same function and structure to implement the same service scheduling procedure; if the first integrated cross-switching unit and the second integrated cross-switching unit are both normal, the TDMSDH line unit and the data service processing unit receive the same service streams from the first integrated cross-switching unit and the second integrated cross-switching unit, and select either of them to implement a processing based on the service streams; if either of the first integrated cross-switching unit and the second integrated cross-switching unit goes wrong, the faulted integrated cross-switching unit reports to the control unit, and the control unit instructs the TDMSDH line unit and the data service processing unit to select the service stream of the normal integrated cross-switching unit.

Please replace the paragraph beginning at page 8, line 16 with:

Preferably, the TDMSDH line unit and the data service processing unit copy the service to the first integrated cross-switching unit and the second integrated cross-switching unit which have completely same function and structure to implement the same service scheduling procedure; the TDMSDH line unit and the data service processing unit receive the same service streams from the first integrated cross-switching unit and the second integrated cross-switching unit, and determine whether the two service streams are normal, select either of them and implement a processing based on the service streams if the two service streams are both normal; if



either of them is abnormal, select the normal service stream.

Please replace the paragraph beginning at page 8, line 28 with:

Preferably, the TDMSDH line unit and the data service processing unit allocate the service to the first integrated cross-switching unit and the second integrated cross-switching unit which have completely same function and structure to implement service scheduling; if the first integrated cross-switching unit and the second integrated cross-switching unit are both normal, the TDMSDH line unit and the data service processing unit receive the service streams from the first integrated cross-switching unit and the second integrated cross-switching unit to implement a processing based on the service streams; if either of the first integrated cross-switching unit and the second integrated cross-switching unit goes wrong, the faulted integrated cross-switching unit reports to the control unit, and the control unit instructs the TDMSDH line unit and the data service processing unit to switch the service allocated to the faulted integrated cross-switching unit to the normal integrated cross-switching unit.

Please replace the paragraph beginning at page 9, line 17 with:

Preferably, the TDMSDH line unit and the data service processing unit allocate the service to the first integrated cross-switching unit and the second integrated cross-switching unit which have completely same function and structure to implement service scheduling; the TDMSDH line unit and the data service processing unit receive the service streams from the first integrated cross-switching unit and the second integrated cross-switching unit and determines whether the service streams are normal;

if either of the service streams is abnormal, switch the service of the integrated cross-switching unit corresponding to the abnormal service stream to the normal integrated cross-switching unit.

Please replace the paragraph beginning at page 10, line 7 with:

Compared with the prior art, the advantageous effects of the present invention include: first, an embodiment of the present invention provides an integrated cross-switching unit in a system, which saves system slots using the integrated cross-switching unit under the precondition of implementing the same data switching. Secondly, since an embodiment of the present invention includes a bus identification module for identifying service source, and a cross-connecting module can implement separation of TDM service and data service, so the line unit and the data service processing unit can be simplified and support virtual concatenation.

Please replace the paragraph beginning at page 11, line 13 with:

FIG. 2 is a block diagram illustrating the structure of an integrated cross-switching unit according to an embodiment of the present invention. The integrated cross-switching unit includes: a bus identification module, a cross-connecting module, a mapping/de-mapping module, an encapsulation/de-encapsulation module, and a packet scheduling module; the bus identification module is connected with a conventional ~~SDH~~SDH/TDM (such as SDH/SONET) line unit and a data service processing unit, for identifying service

source and transmitting the service to the corresponding following parts to implement scheduling.

Please replace the paragraph beginning at page 12, line 14 with:

For conventional TDM service, the cross-connecting module schedules TDM data of one time slot to another time slot through space-division or time-division, implementing cross-scheduling; for data service from the conventional TDM (such as SDH/SONET)SDH line unit, which is probably mixed with TDM service, the time slots corresponding to the data service are scheduled to the mapping/de-mapping module by the cross-connecting module, pass the mapping/de-mapping module and the encapsulation/de-encapsulation module in turn, and get to the packet scheduling module, implementing final scheduling.